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ABSTRACT

This program was designed to prepare leaders in educational research and development. Its main features were attendance at credit and noncredit courses at the University of Wisconsin, the pursuit of personal research interests, and participation in activities of the Research and Development Center for Cognitive Learning. The three specific objectives were 1) to extend the abilities of the trainee to secure knowledge about the primary variables associated with school learning; 2) to extend the competence of the trainee in relating and focusing knowledge about primary variables on a problem area; and 3) to increase the competence of the trainee in conducting research and development in school settings. (MBM)

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FINAL REPORT

POSTDOCTORAL TRAINING PROGRAM

IN EDUCATIONAL RESEARCH AND DEVELOPMENT

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September 1, 1969-August 31, 1970

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Relevant Information Regarding the Trainee

Name of Trainee	Period of Enrollment	Highest Degree	Major Field	Institution	Present Employment 1970-71
Cicirelli, Victor G.	9-1-69 to 8-31-70	Ph.D.	Educational Psychology	University of Michigan	Professor Department of Child Development and Family Life Purdue University West Lafayette, Indiana

Criteria Used in Selecting Trainee:

(a) Must have completed the doctorate within the last ten years within a relevant subject-matter discipline including mathematics, science, or reading or in a relevant behavioral science including education, edycational psychology, psychology, or sociology.

(b) Must receive three favorable letters of recommendation.

(c) Must have published or have in press at least one article, book, or monograph for each year since completing the Ph.D. program.

The candidate selected for this training program met the above criteria. The younger, more productive, more adequately trained, and higher achieving candidate received the appointment.

Nature and Objectives of the Educational Research Training Program

This program was designed to prepare leaders in educational research and development. The main features of the training were (a) attendance of credit and noncredit courses in various departments of the University of Wisconsin, (b) pursuit of personal research interests, and (c) participation for training purposes in Center activities. All course work with regard to (a) was programed to fulfill the individual's needs in relation to the central objective of improving and extending his educational research capabilities. It was anticipated that at least some of the course work would relate to methodology of research. The trainee worked with the principal investigators of the R & D Center who were drawn from various disciplines, as well as with selected scholars who participated in the program of colloquia, seminars, and course instruction.

There were three specific objectives of the training program. The objectives and a short statement of related activities follow.

(a) To extend the abilities of the trainee to secure knowledge about the primary variables associated with school learning. Knowledge of variables was secured through the collection and organization of already existing knowledge and the generation of new knowledge through research. Reviewing the literature, participating in conferences and seminars, engaging in discussions, analyzing, synthesizing, and eventually writing the findings in communicable form were the principal activities involved in the collection and organization of existing knowledge. Many persons with doctorates have not observed or participated in a well-organized program of information collection and analysis. Improvement of the many skills required to do this was one objective of the proposed program.

Conducting research to generate new knowledge about the primary variables associated with efficient school learning is conceived broadly. It may include, for example, controlled experimentation in a laboratory, controlled experimentation in a school setting with groups of subjects, a case study of an individual, or a longitudinal study of a school organization. Carefully designing experiments, choosing appropriate data-gathering instruments and techniques, making relevant statistical analyses, and reporting faithfully were the principal skills required in connection with this objective.

(b) To extend the competence of the trainee in relating and focusing knowledge about primary variables on a problem area, such as concept learning in mathematics, reading abilities in the culturally disadvantaged, or motivation in school learning. One of the most perplexing problems facing education today is relating knowledge from basic research to school problems. Relation of knowledge is accomplished somewhat through reading, but more so through discussions with problem-oriented work groups, seminars with expert consultants, and cooperative research activities. This focusing of knowledge from several specialized areas was a critical factor in conducting the educational research and development.

(c) To increase the competence of the trainee in conducting research and development in school settings. In agriculture, industry, and medicine, research and development eventually is done in the actual setting under normal operating conditions; the payoff is large. The same must be done in education. Knowledge about variables generated in the laboratory or in specially devised situations must eventually be put to test in regular

school settings. Knowledge and skills in research design, statistics, and measurement are required. In addition, attitudes and knowledge about school children, parents, lay people and school personnel are crucial. Acquiring essential knowledge, skills, and attitudes through participation in ongoing research and development projects in school settings was an important objective of the training program.

A Review and Evaluation of the Training Program.

The trainee participated in the following activities as part of the overall training plan:

1. Regular graduate courses in statistics and short courses in computer programming which extended his knowledge and skills in experimental design and data analysis. He now has an acquaintance with matrix algebra and its application to multivariate statistical methods.

2. Seminar courses in human learning increased the depth of the trainee's knowledge about concept learning and problem solving. Of particular interest and value were work with the Concept Mastery Scale (developed by the Center) and the evaluation of elementary school science texts for their adequacy in concept presentation.

3. A field-research project on sibling effects on concept learning provided a rich opportunity to understand the characteristics of primary-grade children using a quasi-clinical approach to data collection. Presentation of the research proposal and progress reports in a seminar, and discussion of the research with the consultants from the Center's Technical Section were of particular help in the areas of research design, instrumentation, and the analysis and interpretation of data.

4. Familiarization with the many ongoing research projects at the Center and the opportunity for informal exchange of ideas with the research staffs of these projects provided the trainee with much new information, new frames of reference for interpreting data, and new hypotheses for future research. (Although the trainee did not agree in all the details, he was particularly impressed with the concepts of the Multiunit School and Individually Guided Education, and the serious attempt to implement these ideas in the schools.)

5. Participation in inservice programs, conferences, and colloquia sponsored by the Center supplied general enrichment (for example, measurement and statistical techniques).

6. The flexible post-doctoral training program of the Center made possible the freedom to carry out a self-imposed reading program, to sample relevant lectures in courses offered by various departments of the University of Wisconsin, and simply to think, to pursue, and develop ideas. These are luxuries not often permitted by the ongoing rush of activities of a regular university position.

The following comments were offered by the trainee:

"All in all, the postdoctoral year was a real learning experience for me which certainly fostered my growth in the area of research. It is now possible for me to design and carry out more elegant experiments, to make more effective use of computer facilities for analysis, and to provide more knowledgeable guidance in training graduate students in research. At the present time, I am engaged in a continuation of the sibling project begun at the Center, and am preparing a proposal for research support based on ideas formulated at the Center. This continued interest and effort in research may not have been possible without the stimulation of the post-doctoral fellowship year."

An Informal Accounting of Charges (Final Accounting to be Forwarded by the Business Office).

Name of Trainee: Victor G. Cicirelli

Stipend	$17,199.96
Supplies	29.94
Travel, domestic	892.49
Patient care costs	1,346.00
Dependency allowance - relocation expense	727.61
TOTAL	$20,196.00